

# PATENT ABSTRACTS OF JAPAN

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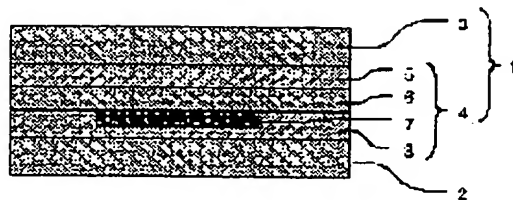
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(54) LAMINATE FILM FOR MANUFACTURING INSERT MOLDING, MANUFACTURE OF INSERT FILM USING THE FILM, AND MANUFACTURE OF INSERT MOLDING

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a laminate film and the method for manufacturing a deeply drawn three-dimensionally shaped insert molding having a surface excellent in wear resistance and chemical resistance by employing the laminate film.

SOLUTION: This laminate film has a release film 3 made of a heat resisting film having a release surface, a transfer layer 4 and a shapable film 2, the elongation represented by the area formed on the transfer surface of the transfer layer after preforming/that before preforming: X 100(%) of which can be 150 % or more. In addition, this transfer layer 4 is equipped with a surface protective layer 5 made of the heat reactive body of a head and active energy containing a polymer having its (meth) acrylic equivalent of 100-300 g/eq, its hydroxyl group value of 20-500 and its weight average molecular weight of 5,000-50,000 and a multifunctional isocyanate formed on the release surface of the release film, and further, in the transfer layer or between the transfer layer and the shapable film, the transfer layer has a pasting layer 8 for bonding the shapable film.



## LEGAL STATUS

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**Japanese Publication for Unexamined Patent Application**

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**A. Relevance of the above-identified Document**

This document has relevance to all claims of the present application.

**B. Translation of the Relevant Passages of the Document**

[CLAIMS]

[CLAIM 2]

... the releasing film is a polyethylene terephthalate resin film.

[CLAIM 3]

... the shapable film is at least one film selected from the group consisting of soft vinyl chloride film, unstretchable polypropylene film, unstretchable polyester film, polycarbonate film, film composed of acryl resin and acrylic rubber, film composed of copolymer resin of styrene and acrylonitrile (AS), film composed of copolymer resin of styrene, butadiene, and acrylonitrile (ABS).

[CLAIM 6]

... the transfer layer has a pattern layer for decorating.

[DETAILED DESCRIPTION OF THE INVENTION]

## [EMBODIMENTS]

[0028]

The release layer is made of a material such as melamine resin release agent, silicon resin release agent, fluorocarbon resin release agent, cellulosic release agent, urea resin release agent, polyurefin resin release agent, paraffin release agent, epoxy resin release agent, amino alkyd resin release agent, and a compound release agent of the above-mentioned release agents.

[0037]

The pattern layer 7 is for decorating a surface of the molded product. A material of the pattern layer 7 may be colored ink which contains as coloring agent a pigment or colorant of an appropriate color, and contains as binder, resin such as polyvinyl resin, polyamide resin, polyester resin, polyacrylic resin, polyurethane resin, polyvinyl acetal resin, polyester urethane resin, cellulose ester resin, and alkyd resin.